

Notice of Allowability

Application No.

09/341,994

Examiner

Phylesha L Dabney

Applicant(s)

FRETZ ET AL

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/169/04.
2. ☐ The allowed claim(s) is/are 1-14, 20, 22-26, 29, 30 and 32.
3. ☒ The drawings filed on 10/28/99 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 23.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

24/C

DETAILED ACTION

This action is in response to an interview conducted 16 June 2004 in which it was agreed to amend the claims to include the significance of the key and keyway orientation.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Mike Bolan on June 16, 2004.

The application has been amended as follows:

In the Claims

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1. (Currently Amended) A hearing aid system, comprising:
a hearing aid case configured to be worn behind the ear of a user, the case containing a microphone, a processor unit, a tube attachment end surface, an output connector having a nipple extending from the tube attachment end surface along a longitudinal axis, and a speaker for delivering amplified sounds to ~~an~~ the output connector ~~of the case~~;
a tube having a first end for attaching to the output connector ~~of the case~~ and a
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second end, the tube having a preformed shape including a first bend extending front the case over the top of the ear of the user and a second bend extending from an outside of the ear into an ear canal of the user;

a key and a corresponding keyway, the key extending substantially parallel to the longitudinal axis of the nipple, the key and corresponding keyway armed to maintain a specific orientation between the case and the tube when the tube is connected to the case;

and an eartip connected to the second end of the tube and configured to fit within the ear canal while allowing sounds outside and within the ear to pass tough the ear canal around the eartip, ~~wherein said tube is sufficiently rigid such that a 1-inch segment of said tube is deflected 0.1 inches by a force of 1 g.~~

2. (Original) The hearing aid system according to Claim 1, wherein the tube has a rigidity sufficient to hold the ear canal eartip in the ear canal and the case behind the ear.
3. (Original) The hearing aid system according to Claim 1, wherein the first bend is located substantially in a first plane and the second bend is located substantially in a second plane which is approximately perpendicular to the first plane.
4. (Original) The hearing aid system according to Claim 1, wherein the tube is formed of a material having a durometer of about 65 to 85 Shore D.
5. (Original) The hearing aid system according to Claim 1, wherein the tube has an inner diameter of about 0.9 mm or less and an outer diameter of about 1.6 nun or less.
6. (Previously Presented) The hearing aid system according to Claim 1, wherein the hearing aid case including a battery has a mass of 1.5 grams or less.

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7. (Currently Amended) The hearing aid system according to Claim 1, ~~the case further comprising a tube attachment end surface, wherein the output connector further comprises~~

~~a nipple extending from the tube attachment end surface and configured to be received in the first end of the tube, the nipple having a longitudinal axis;~~

~~a key and a corresponding keyway, said key extending substantially parallel to the longitudinal axis of the nipple, the key and corresponding keyway arranged to maintain a specific orientation between the case and the tube when the tube is connected to the case wherein the nipple includes the key.~~

8. (Currently Amended) The hearing aid system according to Claim 7, wherein the first end of the tube includes said the corresponding keyway.

9. (Currently Amended) ~~A hearing aid tube for comprising a case of a behind the ear hearing aid to an ear canal eartip, the tube comprising a preformed tube having an enter diameter of about 1.6 mm or less and~~ The hearing aid system according to Claim 1, wherein the tube is formed of a sufficiently rigid material that a 1 inch segment of said the tube is deflected by less than 0.1 inches by a force of 1 g.

10. (Currently Amended) ~~The hearing aid tube~~ The hearing aid system according to Claim 9, wherein the tube has ~~a first bend configured to extend from an outside of the ear into an ear canal of the user~~ has an outer diameter of about 1.6 nun or less.

11. (Currently Amended) ~~The hearing aid tube~~ The hearing aid system according to Claim 10, wherein the tube has been formed at high temperature to retain the first and second bends.

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12. (Currently Amended) ~~A hearing aid tube for connecting a case of a behind the ear hearing aid to an ear canal eartip, The hearing aid system of claim 1, wherein the tube comprising comprises having an outer diameter of about 1.6 mm or less and formed of a material with a durometer of about 65 to 85 Shore D, wherein the tube has a first bend configured to extend over the top of the ear of the user and a second bend configured to extend from an outside of he ear into an ear canal of the user and the tube is sufficiently rigid that a 1 inch (2.54 cm) segment of the tube is deflected by less than 0.1 inches (2.54 mm) by a force of 1 gram.~~

13. (Previously Presented) A hearing aid case comprising:

C a case body configured to be worn behind the ear of a user, the case body containing a microphone, a processor unit, and a speaker, said case body including an attachment end surface, said microphone located at said attachment end surface;

a battery compartment within the case body;

a hearing aid tube for delivering amplified sounds from the speaker to an ear canal of the user, said hearing aid tube adapted to be inserted within said ear canal;

a nipple extending from the attachment end surface and configured to be received in an end of the hearing aid tube, the nipple having a longitudinal axis; and

a key and a corresponding keyway, said key extending substantially parallel to the longitudinal axis of the nipple, the key and corresponding keyway arranged to maintain a specific orientation between the case body and the hearing aid tube when the hearing aid tube is connected to the case body.

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14. (Currently Amended) ~~A hearing aid case~~ The hearing aid case according to claim 13, comprising:

~~a case body configured to be worn behind the ear of a user, the case body containing a microphone, a processor unit, and a speaker, said case body including an attachment end surface, said microphone located at said attachment end surface;~~

~~a battery compartment within the case body;~~

~~a hearing aid tube for delivering amplified sounds from the speaker to an ear canal of the user, said hearing aid tube adapted to be inserted within said ear canal;~~

~~a nipple extending from the attachment end surface and configured to be received in an end of the hearing aid tube, the nipple having a longitudinal axis;~~

~~an annular retention ring on the nipple; and~~

~~a recess on an internal surface of said hearing aid tube, wherein the recess and said the annular retention ring operate cooperatively to retain the hearing aid tube in a snap fit.~~

15-19. (Canceled)

15-20. (Previously Presented) A kit of parts for a behind the ear hearing aid comprising:

a hearing aid housing containing amplification components;

an eartip configured to fit within an ear canal of a user while allowing sound to pass through the ear canal around the eartip;

a hearing aid tube having a first end configured to be connected to the hearing aid housing and a second end configured to be inserted into the eartip, wherein said second end of said hearing aid tube includes at least one rib and wherein an internal surface of

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said eartip includes at least one groove configured to accommodate said at least one rib;
and

an inserting tool for inserting the second end of the hearing aid tube into the ear canal eartip, the inserting tool comprising:

an elongated holder;

an elongated recess within said elongated holder, said elongated recess configured to received a portion of the hearing aid tube adjacent to the second end;

an end surface of said elongated holder configured to about said at least one rib in use.

21. (Cancelled)

16 ~~22~~. (Currently Amended) The hearing aid ~~device~~ system according to Claim ~~21~~ 1, wherein the eartip has a flower-shape with a plurality of petals extending from a central core configured so that the petals fit around the first bend of the ear canal.

17 ~~23~~. (Currently Amended) The hearing aid ~~device~~ system according to Claim ~~21~~ 1 wherein, the eartip includes a single blade extending from a central core configured so that the blade fits behind the ear tragus.

18 ~~24~~. (Currently Amended) The hearing aid ~~device~~ system according to Claim ~~21~~ 1, wherein the eartip is a cortically-shaped member having first cross sectional dimension at a first end which is connected to the tube and a second cross sectional dimension which is larger than the first dimension at a second free end.

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19 ~~25~~. (Currently Amended) The hearing aid ~~device~~ system according to Claim ~~21~~ ¹⁹ 1, wherein the eartip is a dome-shaped member having an annular skirt extending from a central core.

20 ~~26~~. (Currently Amended) The hearing aid ~~device~~ system according to Claim ~~25~~ ¹⁹ 19, wherein the dome-shaped eartip has a plurality of vent holes.

[27-28. (Cancelled)]

21 ~~29~~. (Currently Amended) The hearing aid ~~device~~ system according to Claim ~~25~~ ¹⁹ 19, wherein the dome-shaped eartip includes a wax guard.

22 ~~30~~. (Currently Amended) The hearing aid system according to claim 1, wherein said the eartip comprises an interior socket with a plurality of internal circular grooves and the second end of ~~said~~ the tube comprises a cylindrical member with a plurality of annular ribs on the surface of the cylindrical member, the annular ribs being adapted to be accommodated to the plurality of internal circular grooves.

[31. (Cancelled)]

23 ~~32~~. (Currently Amended) The hearing aid ~~device~~ system according to Claim ~~21~~ 1, wherein ~~said~~ the eartip comprises an interior socket with a plurality of internal circular grooves and the second end of ~~said~~ the tube comprises a cylindrical member with a plurality of annular ribs on the surface of the cylindrical member, the annular ribs being adapted to be accommodated to the plurality of internal circular grooves.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: The instant application is deemed to be directed to a nonobvious improvement over the invention patent in Patent No. 5,987,146 in view of 5,201,007. The improvement comprises a hearing aid having a key which extends parallel to the longitudinal axis of a nipple, and a corresponding keyway, wherein the key and corresponding keyway are arranged to maintain a specific orientation between the case and the tube when the tube is connected to the case, as substantially described and connected with the other functional language of the recited claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phylesha L Dabney whose telephone number is 703-306-5415. The examiner can normally be reached on Mondays, Tuesdays, Wednesdays, Fridays 8:30-4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 703-305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 5, 2004

PLD


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